

## **STORM DRAINAGE SYSTEM**

The Storm Drainage Facilities Improvements Program consists of four major components:

- The Storm Water Management Program (SWMP), which is to reduce the risk of structural flooding by protecting properties from flood damage during a 100-year (1% probability) rainfall event. The program targets local drainage systems and integrates with the primary drainage channels and bayous, which are the responsibility of the Harris County Flood Control District (HCFCD). The FY2007-2011 SWMP projects include the drainage improvements in the TMC as well as several other projects. This includes: Rustling Oaks and Fonn Villas; Edloe; Woodland Heights; Trinity Houston Gardens; and Kirby Relief Phase IV. FY2007-2011 SWMP construction projects total approximately \$204 million.
- The Localized Drainage Improvements Program, which consists of small drainage improvement projects, typically less than \$500,000.

There is a backlog of small drainage issues which when resolved can protect many homes from structural flooding. In many cases one section of pipe, a missing overflow section, or inadequate inlets are the only improvements needed to solve the problem. A quick solution will resolve the problems of an otherwise adequate system. On-call engineering and construction contacts will be used to address these problems quickly and cost effectively. The FY2007-2011 program totals approximately \$20 million.

- The Comprehensive Drainage Plan (CDP), which prioritizes projects based on specific criteria such as the number of reported structural flooding incidents and repetitive loss properties, has identified approximately \$1.6 billion of inadequate systems in the City to be upgraded. This program prioritizes, scopes, designs, and constructs solution to the inadequacies identified for this long-term program.

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- The projects selected to start this program have the highest numbers of flood-damaged properties by drainage area. Each project will be designed to keep the localized drainage in the piping or street sheet flow system to protect the structures from flooding during the 100-year rainfall event. Properties within a riverine 100-year flood zone will be protected from local drainage flooding, but may not be protected from the riverine flooding until the Harris County Flood Control District projects are completed. Funding for these projects total approximately \$100 million.
- Street reconstruction projects sponsored by TxDOT require the local sponsor (City of Houston) to pay for storm drainage improvements associated with its street reconstruction projects. The FY2007-2011 program has identified approximately \$9.25 million to support these projects.

Projects supported by Community Development Block Grants (CDBG) funding includes \$8 million in FY2007. Eligible projects identified for CDBG participation includes: Sunnyside Court (M-0217), Trinity Houston Gardens (M-0292), Local Drainage Improvement Program (M-0126), and Sharpstown Storm Sewer Improvements (M-0256). Funding levels of \$2 million in FY2007 have been established for each project, respectively.

In summary, the FY2007-2011 Storm Drainage Facilities Improvements Program totals \$261 million and is funded primarily by general obligation debt supported by a transfer from the Combined Utility Fund (Water and Wastewater Enterprise Fund). Other funding sources include \$23 million in grant funds (CDBG and FEMA).

**2007 - 2011 CAPITAL IMPROVEMENT PLAN**
**CITY OF HOUSTON - SUMMARY**

Department	Council District	CIP No.	Project	FY Planned Appropriations (\$ Thousands)							
				Through 2005	Estimated 2006	2007	2008	2009	2010	2011	Project Total
Storm Drainage	I	M-0228	Lancaster Relief Storm Sewer	158	2,200	2,000					4,358
Storm Drainage	VAR	M-0241	Stormwater Pump Station Improvement at various underpasses	2,995		500	3,000				6,495
Storm Drainage	A	M-0596	Brittmoore: I-10 Hammerly Storm Sewers			1,700					1,700
Storm Drainage	G	M-0249	Rustling Oaks & Fonn Villas Subdivision Storm Sewer Improvement (Memorial)	450		7,500					7,950
Storm Drainage	H	M-0284	Glen Oaks (Airline Drive: Canino to Little York)				1,101		6,200		7,301
Storm Drainage	I	M-0186	Center Park Subdivision Relief Laterals	5,187	8,184						13,371
Storm Drainage	VAR	M-0296	Regional/Subregional Stormwater Detention			250					250
Storm Drainage	E	M-0574	Monroe Alameda Genoa to Fuqua			2,400					2,400
Storm Drainage	E	M-0276	Scarsdale (Astoria: Flushing Meadows to Binghampton)				460		2,117		2,577
Storm Drainage	VAR	M-0800	Developer Participation	1,572		1,500	1,500	1,500	1,500	1,500	9,072
Storm Drainage	A	M-1002	White Oak Bayou Drainage Improvements							3,000	3,000
Storm Drainage	G	M-0248	Wilchester, Memorial Way & Memorial Trails Drainage Improvement	428	6,910						7,338
Storm Drainage	DE	M-0277	South Park, Southcrest (Crestridge)				752		4,212		4,964
Storm Drainage	E	M-0291	Freeway Manor, Sagemont (Sagechard and Sagarbor)					280		2,400	2,680
Storm Drainage	CDG	M-0267	River Oaks ( Shepherd: Westheimer to Buffalo Bayou)			767		4,296	767	3,529	9,359
Storm Drainage	G	M-0280	Braes Village (Boone)			340		1,564			1,904
Storm Drainage	I	M-0288	Edgebrook, Easthaven (Edgebrook: Klondike to I-45)					816	3,750		4,566

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Storm Drainage	VAR	M-0672	Storm Sewer Improvements Associated with Street Paving and Reconstruction.	1,563							1,563
Storm Drainage	CDI	M-0290	Fourth Ward, Avondale						1,093	6,100	7,193
Storm Drainage	BEI	M-0269	Clairmont Place (Wayside)	301			1,546				1,847
Storm Drainage	DE	M-0272	Crestmont Park, South Acres (Martin Luther King Blvd)	475		310	1,427	1,427			3,639
Storm Drainage	D	M-0294	Bellmont (Cullen)							950	950
Storm Drainage	D	M-0289	Holloway Heights, Almeda-Genoa (Cullen)						1,080	5,900	6,980
Storm Drainage	B	M-0292	Trinity-Houston Gardens (Ernie: Lockwood to Homestead)	644		6,000					6,644
Storm Drainage	C	M-0255	Braes Blvd. and Academy St.; New Storm Drainage Trunk Line	5,536		600	2,700		2,500		11,336
Storm Drainage	C	M-1013	Willow Waterhole Area Relief Storm Sewer							500	500
Storm Drainage	G	M-0230	Kirby Relief Storm Sewer	8,008			7,200				15,208
Storm Drainage	BH	M-0531	South of Little York from Hardy Toll Road to Halls Bayou	470	11,800						12,270
Storm Drainage	C	M-0281	Marilyn Estates							500	500
Storm Drainage	A	M-0589	Holloway Heights, Almeda-Genoa (Cullen)	240					2,100		2,340
Storm Drainage	A	M-0597	Brittmoore: I-10 Hammerly to Clay Detention Pond					2,000			2,000
Storm Drainage	G	M-0261	Buffalo Bayou Detention Pond	285		1,270					1,555
Storm Drainage	F	M-0283	Catalina Square, Robindell (Riptide)			389		1,791			2,180
Storm Drainage	G	M-0250	Kirkwood Briar Forest Drainage Improvements				450		3,000		3,450

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Storm Drainage	C	M-0278	Upper Kirby					5,750			5,750
Storm Drainage	CF	M-0256	SHARPSTOWN STORM SEWER IMPROVEMENTS (Gessner: Braeswood to Hwy 59)	665	5,200	2,000					7,865
Storm Drainage	D	M-0262	Whiteheather Storm Sewer Improvements (Fuqua, Buffalo Speedway to Hiram Clark)	546		1,100	8,500	7,200			17,346
Storm Drainage	H	M-0274	Glen Oaks (Northline: Canino to I-45)			849	849	3,903	3,903		9,504
Storm Drainage	CD	M-0260	Texas Medical Center Drainage Improvements	44,283	3,000	1,852					49,135
Storm Drainage	C	M-0771	Kirby Drive Storm Improvements: S.W. Frwy to Brays Bayou	46,965	10,068	9,648					66,681
Storm Drainage	G	M-0247	Yorkshire and Nottingham Storm Sewer Improvements (Kirkwood: Memorial to I-10)	670			5,500				6,170
Storm Drainage	D	M-0217	Sunnyside Court Storm Sewer Laterals	495	2,950	2,000					5,445
Storm Drainage	H	M-0257	Woodland Heights Storm Sewer Improvements (Pecore: Studemont to I-45)	695		6,779					7,474
Storm Drainage	E	M-0266	Kirkwyn, Sagemont Park	207			1,409				1,616
Storm Drainage	D	M-0295	South End Sunnyside (Scott)							1,050	1,050
Storm Drainage	C	M-0271	Meyerland Area East (Dound, Braesheather, Endicott)							600	600
Storm Drainage	C	M-0279	Meyerland Area West (Braesheather)							500	500
Storm Drainage	ALL	M-NA	Contingencies			21	344	651	251	721	1,988
Storm Drainage	B	M-0282	Houston Garden (Homestead)				1,191		5,477		6,668
Storm Drainage	B	M-0286	Pleasantville (610: Market St. to Guinevere)					756	750	3,500	5,006
Storm Drainage	AH	M-0285	Garden Oaks, Shepherd Forest (Ella)					887	700	5,000	6,587

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Storm Drainage	ALL	M-0220	SWMP; Program Management and Technical Services	25,241	3,200	2,500	2,750	2,750	2,750	2,750	41,941
Storm Drainage	E	M-0268	Gulf Meadows, Kirkwood, South Segement	332							332
Storm Drainage	C	M-0253	Edloe Street area (Breaswood Place) Storm Sewer Relief	1,168		2,500		2,700			6,368
Storm Drainage	CG	M-0189	Dunvale-Lipan Relief Storm Sewer		575						575
Storm Drainage	A	M-1010	Western Village, Sherwood Estates							900	900
Storm Drainage	E	M-0582	South Shaver: Gulf Freeway to Hwy 3			1,300					1,300
Storm Drainage	CF	M-0265	Westmoreland, Sharsptown, Braeburn, Maplewood (Renwick)			1,030		500	5,500	5,300	12,330
Storm Drainage	A	M-0293	Inwood Forest Area						350		350
Storm Drainage	I	M-0273	Glenbrook Valley (Broadway)			405		1,865			2,270
Storm Drainage	G	M-0263	Sherwood Forest Storm Sewer Ststem (I-10: Antoine to Silber)			300		5,000			5,300
Storm Drainage	AH	M-0287	Ridgecrest, Hillendahl Acres, Monarch Oaks, Afton Village (Wirt: Kempwood to I-10)					714		3,300	4,014
Storm Drainage	VAR	M-0126	Local Drainage Improvement Projects	19,011	549	2,000	4,000	4,000	4,000	4,000	37,560